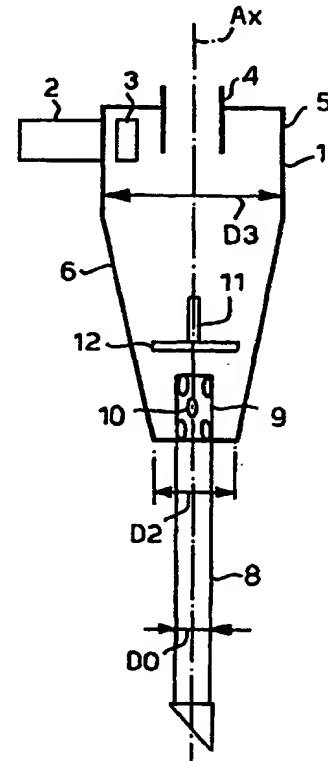


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| <b>(21) International Application Number:</b> ✓ PCT/EP99/08901<br><b>(22) International Filing Date:</b> ✓ 5 November 1999 (05.11.99)<br><b>(30) Priority Data:</b><br>60/107,420 6 November 1998 (06.11.98) US<br><i>06 May 01/30 nos</i><br><b>(71) Applicant (for all designated States except US):</b> SHELL INTERNATIONAL RESEARCH MAATSCHAPPIJ B.V. [NL/NL]; Carel van Bylandtlaan 30, NL-2596 HR The Hague (NL).<br><b>(72) Inventors; and</b><br><b>(75) Inventors/Applicants (for US only):</b> ✓ DIRKSE, Hendrik, Arien [NL/NL]; Carel van Bylandtlaan 30, NL-2596 HR The Hague (NL); ✓ DRIES, Hubertus, Wilhelmus, Albertus [NL/NL]; Badhuisweg 3, NL-1031 CM Amsterdam (NL); ✓ STEIN, Louis, Edward [US/US]; 5818 Autumn Forest, Houston, TX 77092 (US).   |           | <b>(81) Designated States:</b> AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).<br><br><b>Published</b><br><i>With international search report.</i> |
| <b>(54) Title:</b> SEPARATOR APPARATUS ✓   |           |   |
| <b>(57) Abstract</b><br><p>A separator apparatus for separating solids from a gas-solid containing feed resulting in a gas-rich stream, the separator comprising: an upright hollow circular housing fluidly connected to a dipleg for discharging solids positioned below the housing; a gas outlet tube for discharging the gas-rich stream from the circular housing, which outlet tube protrudes substantially co-axial from the top of the housing; inlet means for the gas-solids feed so arranged to create, in use, a vortex flow in the circular housing; and a sieve positioned between the lower part of the circular housing and the upper part of the dipleg, which sieve has openings which do not allow particles having a diameter greater than 0.75 times the diameter of the dipleg to pass the sieve and enter the dipleg and wherein the total area of the openings in the sieve is greater than 2 times the cross-sectional area of the dipleg.</p>  |           |   |